

AMENDMENT IN THE SPECIFICATION

1. Please delete the following portion from line 1 on page 1 through line 1 on page 2:

~~ABSTRACT~~

~~Abstract~~

~~The present invention relates to a mobile communication system, and more particularly to a bias-T apparatus and its center conductor for providing radio frequency signals and power source to outdoor equipment of a Base Transceiver Station (BTS) in a mobile communication system. The bias-T apparatus comprises: a housing having an input connector and an output connector integrally formed at both ends of the housing, a housing hole formed through central portions of the input and output connectors, and a fixing hole formed inside of an upper central portion of the housing, the input connector being connected to a transceiver system, the output connector being connected to an antenna, and a center conductor assembly connected to the input and output connectors for providing electric connection for the bias-T apparatus. The center conductor assembly includes a first center conductor having a reception hole extending longitudinally from one end of the first center conductor, and a second center conductor having a shaft which extends from one end of the second center conductor and is inserted in the reception hole, the shaft having an anodized outer surface which enables the distance between the first center conductor and the second center conductor to be reduced up to several microns, thereby increasing capacitance of a formed capacitor.~~

~~[Representative FIG.]~~

~~FIG. 4~~

—[KEY WORDS]

—Bias-T, Center Conductor

—[SPECIFICATION]

2. Please insert the following paragraph between the title of the invention and the background of the invention:

CLAIM OF PRIORITY

This application claims priority to an application entitled “Bias T apparatus and center conductor of the same” filed in the Korean Industrial Property Office on August 3, 2002 and assigned Serial No. 2002-45997, the contents of which are hereby incorporated by reference.

3. Please amend the paragraph from line 20 on page 3 through line 6 on page 4 to read as follows:

FIG. 2 is a circuit diagram of the bias-T circuit shown in FIG. 1. In the bias-T circuit as shown in FIG. 2, when the signal outputted from the pre-amplifier 108 is inputted through a signal input node [[a]] 201, the signal is outputted to a signal output node [[b]] 202 through a capacitor C1 204 but is not outputted to another node [[c]] 203 through which direct current is applied. It is because the inputted signal is a radio frequency signal which causes the node [[c]] 203 to have an infinite impedance due to an inductor L1 205. Further, direct current (DC) power is inputted through the power input node [[c]] 201 and the inductor [[L1]] 205. Therefore, the output signal of the pre-amplifier 108 and the DC power are synthesized through the bias-T circuit 110 and are then

transmitted to the antenna tower 114.

4. Please amend the paragraph from line 9 through line 11 on page 4 to read as follows:

There are several ways of constructing the capacitor C1 204. First, a chip capacitor may be employed. However, in this case, a portion between an input node and a transmission line causes the assembling of the capacitor to be more complicated and difficult.

5. Please amend three paragraphs from line 2 on page 8 through line 14 on page 9 to read as follows:

The first conductor 400 of the center conductor 300 is disposed in the housing hole. The first conductor 400 includes a first connector pin 400a and a reception tube 400b which form opposite ends of the first conductor 400. The first connector pin 400a is connected through the output connector 410 to the antenna side. The reception tube 400b is hollow and thus has a reception hole which is formed in the reception tube 400b and extends in the longitudinal direction of the housing hole. Preferably, the reception tube 400b has a cylindrical shape. The housing hole has a first housing hole portion 500 formed through a central portion of the output connector 410 and a second housing hole portion 502 formed through a central portion of the input connector 408. The first conductor 400 having the construction described above is inserted into the first housing hole portion 500. The second conductor 402 of the center conductor 300 is also disposed in the housing hole of the housing 412. The second conductor 402 has a second connector pin 402a and a conductor shaft 404 which form opposite ends of the second conductor 402. The second connector pin 402a is

connected to the ground BTS through the input connector 408. The conductor shaft 404 is inserted in the reception hole formed in the reception tube 400b of the first conductor 400. The conductor shaft 404 has an anodized outer surface. The second conductor 402 is inserted in the second housing hole portion 502 of the housing hole formed inside of the input connector 408. The conductor shaft 404 has a shape corresponding to that of the reception tube 400b, preferably a cylindrical shape.

In assembling the center conductor 300 as described above, the first conductor 400 is inserted in the first housing hole portion 500 inside of the output connector 410 and the second conductor 402 is inserted in the second housing hole portion 502 inside of the input connector 408, and then the conductor shaft 404 of the second conductor 402 is inserted in the reception tube 400b of the first conductor 400, so that the first conductor 400 and the second conductor 402 are assembled with each other in the housing 412.

In the center conductor 300 constructed by the first conductor 400 and the second conductor 402 as described above, the conductor shaft 404 and the reception tube 400b will function as electrode plates of the capacitor. Therefore, contact surfaces between the conductor shaft 404 and the reception tube 400b corresponding to electrode plates of the capacitor can be enlarged without increasing the entire size of the center conductor 300 by simply increasing a degree by which the conductor shaft 404 is inserted in the reception tube 400b. Further, the outer surface of the conductor shaft 404 (or the inner surface of the reception tube 400b) is anodized, that is, an oxide film is formed on the outer surface of the conductor shaft 404 or the inner surface of the reception tube 400b. Therefore, the conductor shaft 404 and the reception tube 400b can be in close contact with each other while enabling them to function as the electrode plates of the capacitor, so that the

gap between the conductor shaft 404 and the reception tube 400b functioning as the electrode plates can be reduced up to several microns.

6. Please amend the paragraph from line 7 to line 14 on page 11 to read as follows:

While the invention has been shown and described with reference to certain preferred embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the spirit and scope of the invention as defined by the appended claims. For example, instead of anodizing the outer surface of the conductor shaft 404, the inner surface of the reception tube 400b may be anodized. Further, instead of the construction of the center conductor 300 described above in which the first conductor 400 has the reception tube 400b and the second conductor 402 has the conductor shaft 404, the first conductor 400 may have a conductor shaft and the second conductor 402 may have a reception tube.

7. Please delete [INDUSTRIAL UTILITY] on line 17 of page 11.

~~[INDUSTRIAL UTILITY]~~

8. Please insert the following Abstract at the end of application.

ABSTRACT

A bias-T apparatus and its center conductor for providing radio frequency signals and power source to outdoor equipment of a Base Transceiver Station (BTS) in a mobile communication system. The bias-T apparatus includes a housing having an input connector and an output connector

integrally formed at both ends of the housing, a housing hole formed through central portions of the input and output connectors, and a fixing hole formed inside of an upper central portion of the housing, the input connector being connected to a transceiver system, the output connector being connected to an antenna; and a center conductor assembly connected to the input and output connectors for providing electric connection for the bias-T apparatus. The center conductor assembly includes a first center conductor having a reception hole extending longitudinally from one end of the first center conductor; and a second center conductor having a shaft which extends from one end of the second center conductor and is inserted in the reception hole, the shaft having an anodized outer surface which enables the distance between the first center conductor and the second center conductor to be reduced up to several microns, thereby increasing capacitance of a formed capacitor.